

PREVIEWING INTERNET RESOURCES

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Inventor: HAMILTON MICHAEL (AU); DODDS ROBERT RONALD (AU)

Applicant: HAMILTON MICHAEL (AU); DODDS ROBERT RONALD (AU)

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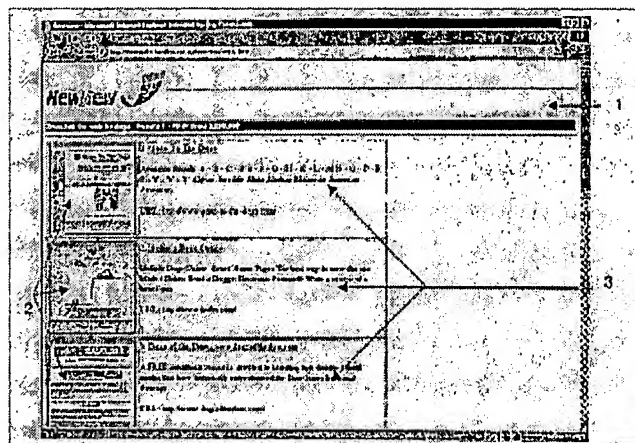
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Abstract of WO02061610

Generating a document which contains representations of other resources from an HTML document which contains hyperlinks to the other resources uses a software application to insert frames into the HTML document, where each frame is associated with one of the hyperlinks, and loads into each frame a representation of the resource to which the associated hyperlink points. The representation may be the resource itself, a scaled version of the resource itself, a graphical representation of the appearance of the resource, an audio representation of the resource or part thereof of a video representation of the resource or part thereof.



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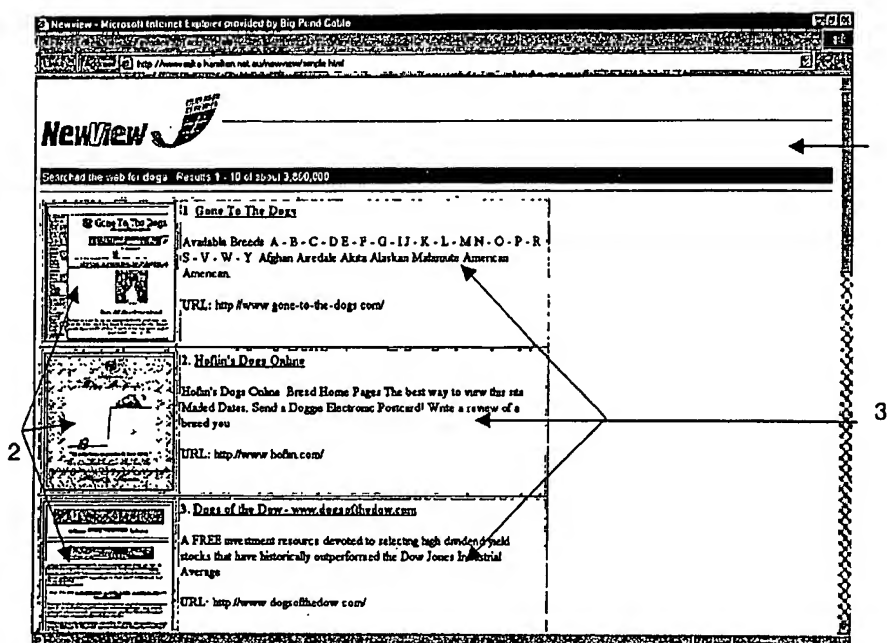
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- (71) Applicants and
(72) Inventors: **HAMILTON, Michael** [AU/AU]; 2/76 Blackburn Road, Doncaster East, Victoria 3109 (AU). **DODDS, Robert, Ronald** [AU/AU]; 4 Niobe Court, Lower Templestowe, Victoria 3109 (AU).
- (74) Agent: **PHILLIPS ORMONDE & FITZPATRICK**; 367 Collins Street, Melbourne, Victoria 3000 (AU).
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(57) Abstract: Generating a document which contains representations of other resources from an HTML document which contains hyperlinks to the other resources uses a software application to insert frames into the HTML document, where each frame is associated with one of the hyperlinks, and loads into each frame a representation of the resource to which the associated hyperlink points. The representation may be the resource itself, a scaled version of the resource itself, a graphical representation of the appearance of the resource, an audio representation of the resource or part thereof of a video representation of the resource or part thereof.

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PREVIEWING INTERNET RESOURCES

Field of the Invention

This invention relates to a method of previewing Internet resources. It
5 relates particularly but not exclusively to a method of previewing one or more
Internet resources which are hyperlinked to an HTML document, to a method of
displaying the output of an Internet search engine or directory or any other
application where a list of Internet resources arises, and to a method of
converting an HTML document which contains text hyperlinks to other
10 resources, into a document which contains visual or audio or video
representations of the other resources, or any combination thereof.

Background to the Invention

One of the most common ways of searching for information on the
15 Internet is to use a search engine such as Altavista or a directory such as
Yahoo! In a key word search, key words are typed into the search engine
enquiry box, and the search engine returns an HTML (HyperText Mark-up
Language) page displaying a list of Internet sites which have been indexed
according to the key words used in the search. Each Internet site included in the
20 list is presented in the form of a hypertext link, with a short description of the
site. As an alternative to a key word search, the Yahoo! search engine allows a
computer user to locate relevant Internet sites by navigating through a
hierarchical tree of subject matter and geographical classifications. The search
results are again presented as a list of Internet sites in the form of hypertext
25 links, with a short description of each site.

Unfortunately, the short descriptions of the contents of Internet sites are
often inaccurate, out of date, or not sufficiently explicit to indicate to the
computer user whether the site is relevant to the user's particular enquiry.
Further, there is a significant problem with "dead links", which are links referring
30 to pages which are no longer on the given server, pages on servers which no
longer exist, or pages on servers which are temporarily off-line. As a
consequence, the user often wastes considerable time clicking on a hypertext
link presented on the search engine results page, viewing the Internet site
brought up by the link, determining that the site is not relevant to the user's

particular enquiry, navigating back to the search engine results page, and repeating the process with the next hypertext link.

The same problem occurs on almost any HTML page in which the user may want to view or preview the targets of one or more Internet resources
5 contained therein.

A partial solution to this problem is provided by Quickbrowse.com, at the site www.quickbrowse.com. This enables a computer user to request the Quickbrowse server to "stitch" multiple Internet pages together to create a single long web page, which is then forwarded to the user. This is useful, for
10 example, if a person needs to review the same Internet sites each day. Rather than having to view them one at a time, the person can simply create a single "Quickbrowse" page, and review that page each day. However, it is still necessary for the user to scroll through the entire "stitched-together" page to determine whether it contains information relevant to the user's particular
15 interests.

Quickbrowse.com also provides a "stitching" service relating to search engine output pages, which solves a different problem. Often a search engine limits the number of results displayed on an output page to a given number or a given length of page. In order to see results not listed on the first output page, it
20 is necessary to request the second output page, then the third output page, and so on. The Quickbrowse.com service enables the user to see multiple search engine output pages stitched together. However, this service is of limited value because it is still necessary for the user to review each hyperlinked page one at a time to determine if it is relevant.

A different partial solution is provided by an Internet browsing tool called
25 Katiesoft, available from www.katiesoft.com. Katiesoft provides a number of features, one of which is the ability to view up to four Internet sites simultaneously. This enables a user, for example, to load the contents of four unrelated sites simultaneously rather than sequentially. This can reduce the
30 amount of time wasted on the typical one-at-a-time process, but it does not significantly reduce the overall number of "clicks" needed to view the various pages.

Similar "4-in-one" type search engines are provided at www.all4one.com, www.framesearch.net, www.searchspaniel.com, www.multi-search-engine.com,

and www.verysimple.com. All of these services allow a computer user to type in a search term, and have a search conducted simultaneously on four different search engines, with the results being displayed in four separate frames in the user's browser. The FrameSearch service also allows the user to select a number of different search engines for a simultaneous search, with the output being displayed in a different browser window for each search engine. These services are useful in reducing search time if the user intends to conduct searches on several different search engines, but they do not resolve the problem of having to click on the results one at a time and waiting for the hyperlinked web pages to come up to reveal whether they are relevant.

Many websites also offer audio files which accompany images, or which are presented alone, and video clips which combine audio with animated visual transmissions. These files are large and often take a long time to download. There also exist search engines which specifically look for and present lists of audio or video files from which the user may make a selection. Because the size of these files is larger than that of visual files, they often take significantly longer to download. Consequently, there is a greater likelihood that a connection to a particular server may time out before the entire file has been transferred, and that the user will have to invest significantly longer in determining exactly which audio or video files are most desirable.

Summary of the Invention

According to a first aspect of the present invention, there is provided a method of previewing one or more Internet resources which are hyperlinked to an HTML document, including the steps of:

- (a) viewing the HTML document;
- (b) inserting into the HTML document representations of the Internet resources;

wherein the representations are either visual, audio or a combination thereof.

Internet resources may include other HTML pages, images, sound files, movie files and any other type of resource to which a hyperlink may point.

It will be seen that the previewing method of the present invention enables the computer user to assess the relevance of Internet resources

without having to go through the usual laborious process of following the hyperlinks one by one.

The visual representation of an Internet resource may be any suitable visual representation. In one preferred arrangement, the visual representation is the whole or a part of the hyperlinked resource itself, rendered in its usual manner. In another preferred arrangement, the visual representation is a scaled version of the whole or a part of the Internet resource itself. This enables the overall appearance of the resource to be viewed at a smaller size than normal, so that less space is taken on the user's screen and more resources can be displayed on a single screen. Alternatively, where appropriate to the amount of available space, the resource may be reviewed at a larger size than normal. The aspect ratio of the resource may be preserved when the resource is scaled, or it may be altered to suit the available space. "Zoom in" and "zoom out" facilities may be provided.

Where the visual representation consists of or contains part or all of the Internet resource itself or a scaled version of that resource, it is preferred that the resource as displayed be fully functional, with all of its own hyperlinks (if any) being fully operational and clickable.

It is further preferred that, where the previews are displayed in one or more frames, the frames include scroll bars where the size of the resource being displayed exceeds the size of the frame, allowing the view shown by that frame of the associated Internet resource to be scrolled upwards, downwards, left and right.

It is further preferred that each frame can be resized, so as to permit a more complete or less complete view of the associated Internet resource. The resizing feature may provide a limited number of sizes such as a standard size view and a full browser size view, or, more preferably, it may allow the frame to be resized to any custom size by dragging the frame's borders.

Each frame may also display one or more of the following:

- (a) a title bar for the frame;
- (b) one or more icons on the title bar;
- (c) an advertisement, which may be a targeted advertisement selected to correspond with the nature of the contents of the associated Internet resource;

(d) text, which may include in text form the URL of the associated Internet resource, and which may include a description of the contents of the Internet resource.

It is preferred that audio or video representations of an Internet resource are abbreviated or truncated versions of the original Internet resource, to avoid the lengthy download times and timing out complications which are otherwise associated with their retrieval. This may be performed by creating an audio or video thumbnail using techniques which include:

- (a) excerpting the file, wherein only a portion of the file is sent, e.g. the portion of the file which contains the file's dominant theme, melody or rhythm; or
- (b) re-encoding the file, wherein the file is compressed or alternatively encoded, perhaps at the expense of the quality or resolution (e.g. mono instead of stereo) of the file.

The downloading of a video thumbnail may involve sending a still image of a frame of a movie, or only a few seconds of the movie, enabling the viewer to determine whether they wish to download the entire file. This would work particularly well with MIDI files, which are composed of sounds which can be produced by a computer or other MIDI device, but which are not actual recordings of sounds.

The computing power which is required to process audio and video files into audio or video thumbnails is moderately high. Therefore, it is preferred that there is a server which is dedicated to producing thumbnails (previews) of audio and video files on demand and a search engine which is dedicated to the production of audio and video thumbnail (preview) files ahead of time.

It will be seen that the present invention provides an opportunity for a new form of advertising, which may be relatively non-intrusive. Each frame may have a portion such as a strip across the bottom, across the top, or along one of the sides, allocated for an advertisement, such as a banner advertisement. The advertising may be targeted, in that the topic of the particular advertisement selected may correspond with the topic of the Internet resource being displayed in the frame. The nature of the information being conveyed in a resource may be discerned by detecting key words as that resource is being retrieved. If, for example, the words in the resource being retrieved include "banking" and "account" and "financial", it may be deduced that the resource is probably

related to banking, and an advertisement relating to banking services could be displayed in the same frame.

One problem associated with the invention is that some Internet pages have associated pop-up windows which appear when the page is accessed.

5 This is particularly common with pages located on servers which offer free web space. The pop-up windows are undesirable from the point of view of operation of the invention, and it is preferred that the method further includes the step of suppressing any pop-up windows associated with the hyperlinked resource. Alternatively or additionally, the method may present a dialog box, allowing the
10 user to permit or deny the pop-up window to appear.

Another problem associated with the invention involves "breaking out of frames". Some Internet content providers prefer not to have content from their own sites appearing without attribution in a frame on someone else's site. CNN (CNN.com) is one example. To prevent this, the CNN site includes software
15 which causes the site as it is loading to "break out" of the frame and "grab" the whole of the browser window, so that the CNN site is the only one which can be seen by the computer user. This is undesirable from the point of view of the invention, and it is preferred that the method of the present invention further includes the step of suppressing any anti-frame coding associated with the
20 Internet resource which would otherwise cause the resource to break out of the frame.

As an alternative to the actual Internet resource or a scaled version of the actual resource, the visual representation of the resource displayed in each frame may be a graphical representation of the appearance of that resource.
25 This may be in a bitmap or vector graphics format or any other suitable graphics format. This arrangement has the advantage that the graphical representations may typically download to the user's computer considerably faster than the actual resource.

The visual, audio or video representation of the resource may be
30 generated in any suitable manner. In a preferred arrangement, the representation is generated on a web server associated with the Internet resource. This can be cached on the resource's web server, and could allow others who wish to view the resource to preview it by viewing the representation

(which downloads quickly) without having to download the resource itself (which may download slowly).

Alternatively, the visual, audio or video representation may be generated by the Internet Service Provider (ISP) of the person who is viewing the HTML document. The "preview" service can thus be a service offered to subscribers by the ISP. The ISP typically has a relatively high-bandwidth Internet connection and can retrieve web pages and generate a visual, audio or video representation relatively quickly, whereas the computer user may have a relatively low-bandwidth connection, so that in most cases it is much faster for the ISP to retrieve the resource in question, generate a visual, audio or video representation, and download it to the user's computer than it is for the computer user to retrieve and download to actual resource. Speed could be further improved if the ISP maintains a cache of representations for frequently accessed pages.

Alternatively, the visual, audio or video representation may be generated by a search engine or other provider of services on the Internet. Again, the search engine or other provider could maintain a cache of frequently accessed representations.

Alternatively, the visual representation may be generated by an image server which receives requests for images of resources, accesses those resources, generates images, supplies those images in response to requests, and, optionally, caches frequently accessed images.

In an especially preferred form, the method of the present invention involves each frame first being filled with a visual, audio or video representation of the Internet resource, and the representation is subsequently replaced by the Internet resource itself or a scaled version of the Internet resource itself. This enables a relatively rapid automatic preview, followed by automatic access to the actual resource, unless the computer user has made an alternative selection in the meantime.

According to a second aspect of the invention, there is provided a method of displaying the output of an Internet search engine or directory, including the steps of:

(a) displaying one or more frames on the search engine or directory output page, each search or directory result being associated with an Internet resource;

- 5 (b) in each of the one or more frames, displaying a representation of one of the resources associated with a search or directory result;
wherein the representation is visual, audio or a combination thereof.

According to a third aspect of the invention, there is provided a method of operating an Internet resource locating service including the steps of:

- (a) maintaining a database of Internet page addresses;
10 (b) storing previews of Internet pages;
(c) receiving requests for Internet resource location information;
(d) responding to the requests with resource location information which includes one or more of the previews;
wherein the previews are visual, audio or a combination thereof.

- 15 Preferably, this method further includes the steps of generating and storing one or more preview files for a page whenever the Internet resource locating service accesses a new or updated Internet page.

According to a fourth aspect of the invention, there is provided a method of generating a document which contains representations of other resources
20 from an HTML document which contains hyperlinks to the other resources, including the steps of:

- (a) using a software application to insert frames into the HTML document, each frame being associated with one of the hyperlinks;
(b) loading into each frame a representation of the resource to which the
25 associated hyperlink points, wherein the representation is:
(i) the resource itself; or
(ii) a scaled version of the resource itself; or
(iii) a graphical representation of the appearance of the resource; or
(iv) an audio representation of the resource or part thereof; or
30 (v) a video representation of the resource or part thereof.

According to a fifth aspect of the invention, there is provided a method of providing in an HTML document, a display of the contents of one or more Internet resources, including the steps of:

- (a) displaying a frame on the HTML document;

- (b) in the frame, displaying a representation of one of the Internet resources;
- (c) after a short period of time, replacing the contents of the frame with a representation of one of the other Internet resources;

wherein the representation of the Internet resources are either visual, audible or

5 video representations of the resource.

This aspect of the invention is similar to the aspects previously described in that it gives a "preview" of Internet resources, but it does this sequentially rather than simultaneously. The visual representations may have any of the optional characteristics referred to previously. "Transition effects" of the type
10 used in computerized slide shows may be provided to give an "animated" appearance to the frame.

The frame may display representations of a plurality of the Internet resources, one after the other. More than one frame may be displayed on the HTML document, and more than one of those frames may display cycling visual
15 representations of Internet resources.

According to a sixth aspect of the invention, there is provided a method of displaying a preview of a resource which is hyperlinked to an HTML document, including the steps of:

- (a) displaying the HTML document; and
- 20 (b) upon a user rolling a mouse cursor over a hyperlink on the document, automatically presenting a representation of the hyperlinked resource;

wherein the representation of the hyperlinked resource is visual, audio or a combination thereof.

Preferably, this method further includes the step of downloading visual
25 representations for a plurality of resources which are hyperlinked to the document, and caching those representations ready for display when the user rolls the mouse cursor over a relevant hyperlink.

Brief Description of the Drawings

30 The invention will now be described in further detail by reference to the attached drawings which show an example form of the invention. It is to be understood that the particularity of those drawings does not supersede the generality of the preceding description of the invention.

Figure 1 shows a simple embodiment of the invention wherein rendered representations of Internet resources which have been fetched by a search engine are accompanied by text descriptions of those resources.

5 Figure 2 is a representation of a search engine output page according to an embodiment of the invention wherein rendered representations of Internet resources are shown in a frame, and where these rendered representations may be scrolled and zoomed.

Figure 3 is a representation of the search engine output page of Figure 2 showing multiple concurrent renderings of the retrieved Internet resources.

10 Figure 4 shows the search engine output page of Figure 3, where the width of the rendered representations relative to the text description has been adjusted.

Figure 5 shows the search engine output page of Figure 3 with the width of the rendered representation smaller than that of Figure 4.

15 Figure 6 shows the search engine output page of Figure 3 with the width feature activated to illustrate each rendered representation at a smaller width.

Figure 7 shows the search engine output page of Figure 3 with a zoom feature activated to illustrate each rendered representation at a smaller scale, and with the width feature activated to illustrate each rendered representation at
20 a smaller width.

Figure 8 illustrates a conventional Internet directory page for comparison with the illustration in Figure 9.

Figure 9 illustrates another embodiment of the invention as applied to the display of an Internet directory.

25 Figure 10 illustrates yet another embodiment of the invention as applied to a user homepage or portal.

Figure 11 illustrates yet another embodiment of the invention that facilitates the creation and editing of topics and items displayed in Figure 10.

30 Figure 12 illustrates yet another embodiment of the invention wherein rendered representations of Internet resources which are the targets of hyperlinks contained within an HTML document are displayed within a second HTML document.

Figure 13 illustrates yet another embodiment of the invention wherein rendered representations of Internet resources which are the targets of

hyperlinks contained within an HTML document are displayed within the "chrome" area of a browser window.

Figure 14 illustrates yet another embodiment of the invention wherein rendered representations of Internet resources which are the targets of
5 hyperlinks contained within an HTML document are displayed within a second HTML document in a style similar to that which is illustrated in Figure 2.

Detailed Description

Referring firstly to Figure 1, there is shown an embodiment of the
10 invention wherein the display of a list of Internet resources obtained as a result of an Internet search engine inquiry is presented in HTML document 1. A representation of each resource 2 is rendered and is associated with text 3 which describes that resource. Where appropriate, and having regard to the type of Internet resource which is listed, representation 2 may be rendered as a
15 graphic image of the Internet resource, the resource itself, or as any other suitable representation. Furthermore, the representation may be rendered by geometrically scaling it to dimensions which differ to that of the resource's original form.

Referring now to Figure 2, there is shown an embodiment of the
20 invention wherein the display of a list of Internet resources obtained as a result of an Internet search engine result is presented in HTML document 1. HTML document 1 contains two outer frames 4 and 5. Frame 4 is a container for one or more further frames, each of which contains rendered representations of each item in the list of the Internet resources which was generated by the
25 search engine. Frame 4 is equipped with scroll bars 6, enabling the user to scroll the contents of frame 8, which is located inside frame 4, into view. Frame 5 contains a list which describes each Internet resource which was retrieved by the search engine, and is also equipped with scroll bars 7. HTML document 1 is equipped with scroll bars 9 so that areas of interest which otherwise sit outside
30 the area of the screen can be scrolled into view.

The visual representation of the first of the Internet resources is contained within frame 8. Subsequent frames which are not visible in Figure 2 contain visual representations of the rest of the Internet resources and are located inside frame 4, below the representation of the first of the resources.

Frame 4 is equipped with scroll bars 6 so that these frames may be scrolled into view. Subsequent frames, similar to frame 8 and which contain visual representations of items from the list of Internet resources which were generated by the search engine are beneath frame 8 and may be brought into
5 view by scrolling the page using scroll bar 6.

The user may place a selection tool, such as the mouse pointer, over any of the hypertext links contained within frame 5 (i.e. perform a mouse-rollover action). The representation of the resource which is the target of that hypertext link is then rendered in the top of frame 4 so that it is visible to the user, without
10 the user having to select the link by clicking on it. For example, the user conducts a search on "Bach", and the search engine locates Internet resources which are related to the topic. HTML document 1 is generated and displayed within HTML browser 11. Inside HTML document 1, frame 4 displays frames into which representations of each related Internet resource will be rendered.

15 If the user scrolls down list of search results 12 contained within frame 5 to the seventh result (the visual representation of which is off screen at this time) and places the mouse pointer over the hypertext link for that result, the frame containing the representation of that hyperlinked resource is rotated to the top of the montage of frame 4 such that it is inside the screen and visible to
20 the user, without the user ever needing to "click" on the hyperlink to that particular resource.

If the user decides that that resource is not appropriate, the mouse pointer can be placed over another hypertext link in list 12 at which time the representation of the resource to which the hypertext link under the pointer refers is displayed at the top of frame 4.
25

In another embodiment of the invention, the user may set the display to cycle through the list of Internet resources, enabling the user to gain an overview of the content of each resource without having to manually select or navigate to each individual resource. It is preferred that the user stipulates the
30 cycle rate or the length of time for which each Internet resource is displayed before the next resource is shown. Alternatively, the display may provide the user with a variety of preset cycle rates. It is preferable that if the user wishes to select a particular resource at any time during the cycling of search results, the user may click anywhere on the page. This would cease the cycling process

and the selected page would be retained in the display for the user to review. Alternatively, the user may select an Internet resource from the list which is shown, and the resource to which the selected hyperlink refers is retrieved by the browser.

5 In yet another embodiment of the invention, the user is able to set the browser to "full screen mode" (also known as "theatre" or "kiosk" mode). This dedicates the entire width and height of the user's screen to displaying only the items grouped as 13 in Figure 2. Browser controls such as menu bars, icons and address input boxes are removed from the display. In this way, a much
10 larger area is made available for the rendering of Internet resources.

 Figure 3 illustrates a way in which, in another preferred embodiment of the invention, the user may specify the number of Internet resources for which representations are rendered, across the screen at any one time, within frame 4. Here, the user has specified that a montage of Internet resources 2 will be
15 rendered by tiling their representations three resources across, inside frame 4. This enables the user to review more than one Internet resource 2 from list 12 at any one time.

 It is further preferred that the display provides the user with the option to alter the relative proportion of the widths of frame 4 and search results frame 5
20 which contains list of search results 12. This additional feature is illustrated by way of example in Figure 4. Frame 5 which contains list of the search results 12 has been narrowed, thereby increasing the area inside frame 4 in which rendered representations of Internet resources 2 may be displayed.

 It is further preferred that the display provides the user with the option to
25 zoom the rendered representations of the Internet resources displayed in frame 4. This additional feature is illustrated by way of example in Figure 5. Here the "zoom factor" has been set to 50%. This has the effect of allowing a greater portion of each Internet resource 2, rendered within frame 4 to be viewed. In yet another preferred embodiment of the invention, the display provides the user
30 with the option to adjust the width and height of the visual representations of the Internet resources 2 which are displayed inside frame 4. This additional feature is illustrated by way of example in Figure 6. Here the "width factor" and "height factor" has been set to 50%. This has the effect of allowing a higher number of Internet resources 2 which are displayed inside frame 4 to be viewed.

It is further preferred that the display provides the user with the option to combine the adjustment of both the zoom factor as exemplified in Figure 5, and the width and height as exemplified in Figure 6, of the rendered representations of the Internet resources 2 displayed in frame 4. These additional features are illustrated by way of example in Figure 7. Here the zoom factor has been set to 50%, and the width and height factor has also been set to 50%. This has the effect of allowing a both a greater portion of each Internet resource, and a greater number of such resources displayed within frame 4.

It is to be understood that in illustrating these preferred embodiments, the lists of Internet resources and the rendered representations associated therewith need not necessarily have been produced solely as the result of a search engine inquiry. Existing Internet directories such as those available at www.yahoo.com and www.dmoz.org provide lists of Internet resources which are ordered into a hierarchy of topics and categories. In order to compare and contrast the output of existing Internet directories with the output of the present invention, an example of a hypothetical page from some such conventionally styled directory is shown in Figure 8. The conventionally styled directory illustrated in Figure 8 shows:

- (a) major subcategory 14, which in this example is "Home/Regional/Countries/Australia/Arts and Humanities";
- (b) currently selected subcategory 15 under subcategory 14, which in this example is "Art History";
- (c) several further subcategories 16 which are available under the currently selected subcategory 15, which in this example are "Archaeology", "Architectural History" and "Artists";
- (d) textual descriptions (including hypertext links) 17 of items which fall under the currently selected subcategory 15 which in this example are "In the Artist's Footsteps", "University of Queensland", and "Art Deco Society of NSW, The";

Figure 9 shows an embodiment of the invention as applied to the sample directory page of Figure 8. Major subcategory 14, currently selected subcategory 15, and further subcategories 16 are displayed at the top of the screen in a format which is similar to that of the original directory page in Figure 8. However, in Figure 9, textual descriptions 17 of Figure 8 are now rendered

representations 17b of the actual resources. Moreover, textual descriptions 17 are retained in the screen in the form of a list, presented down the right side of the screen, enabling the user to continually compare and contrast the category results which were retrieved and presented in Figure 8.

5 Internet web browsers typically permit a user to nominate a "home page" which is a web page initially displayed when the browser is loaded. Various entities offer "portal" sites which group together services which a user may frequently access; such portals are often intended to be set by the user as their home page. A further preferred embodiment of the invention illustrating its applicability to such home pages and portals, is illustrated in Figures 10 and 11. 10 In Figure 10, a web page showing a series of buttons 18, labeled with various topics such as "News", "Business", "Sport", "Entertainment", "Travel" and "IT" is illustrated. Selecting the button for a particular topic results in the display of a list of Internet resources which are associated with that topic, together with 15 rendered representations of those resources. Again, a list of available related resources and their hypertext links is presented, in this example, down the right side of the screen.

It is preferred that the user is provided with a means to edit both the topics and the list of Internet resources associated with those topics, in order to 20 customize and personalize these lists according to the user's individual requirements. This can be performed using any convenient manner, one of which is presented in Figure 11. In this editing form, selection list 26 contains a list of topic names which can be selected or deselected by moving them into or out of selection list 27 with buttons 28. New topic names can be added, and 25 existing topic names modified, by entering or modifying the topic name using input box 29. Internet resources associated with a given topic may then be selected in a similar manner with selection lists 30 and 31, and buttons 32. New entries pointing to Internet resources can be added, and existing entries modified, by entering the appropriate details into Uniform Resource Location 30 input box 33, title box 34, and description input box 35. Additions and changes made in this manner are then updated in the page illustrated in Figure 10, thereby permitting the user to personalize their home page.

In a preferred embodiment of the invention, illustrated in Figure 12, a popup window 19 containing a rendered representation 20 of an Internet

resource which, for example, is the target of a hyperlink 21 contained within a web page 1, is produced after the user has placed a mouse cursor or other pointing device over the hyperlink 21 and then left the mouse cursor or other pointing device stationary over the hyperlink 21 for a period of time. In this example, the user has left the mouse cursor or other pointing device over
5 hyperlink 21, which is entitled "Biography, Portraits and Literature". As a result, the web page which is the target of hyperlink 21 and is entitled "Biography, Portraits and Literature" page is presented as a visual representation 20 of that page, inside window 19.

10 As an additional feature, after a further period of time has elapsed, visual representation 20 is replaced with further visual representations derived from other hyperlinks in HTML document 21. Transition effects such as fades, wipes and dissolves may be employed as the visual representation of one hyperlink is replaced with the visual representation of another hyperlink. It is also preferred
15 that the display facilitates the placement of an advertisement 36 within popup window 19. The subject matter of the advertisement may be determined using a computer program which selects an advertisement which has relevance to the contents of either HTML document 1 or the Internet resource which is the target of hyperlink 21.

20 Figure 13 illustrates yet another preferred embodiment of the invention wherein rendered representations 22 of internet resources which are the targets of hyperlinks contained within HTML document 1 are displayed within browser window 23 in area 24. Area 24 (sometimes termed the "chrome" of a window) is normally used for the display of menus, icons or address bars. The rendered
25 representation to be displayed may be determined by detecting when the user has placed the mouse cursor or other pointing device over a hyperlink, as previously described. Alternatively, the user may elect that rendered representations sequentially cycle through each hyperlink which is contained within the HTML document 1, with a short delay between each successive
30 representation. Optional transition effects such as fades, wipes and dissolves may be employed as each representation is displayed.

Figure 14 illustrates yet another preferred embodiment of the invention, wherein second HTML document 25, containing rendered representations of one or more the internet resources which are the targets of hyperlinks contained

within HTML document 1 is displayed when commanded by the user. The user may perform this command in any convenient manner, such as by clicking on a background or empty area of document HTML document 1. Second HTML document 25 also provides the features demonstrated previously in figures 2 through 7, inclusive.

It is to be understood that various alterations, additions and/or modifications may be made to the parts previously described without departing from the ambit of the invention.

Claims:

1. A method of previewing one or more Internet resources which are hyperlinked to an HTML document, including the steps of:
 - 5 (a) viewing the HTML document;
 - (b) inserting into the HTML document representations of the Internet resources;wherein the representations are either visual, audio or a combination thereof.
- 10 2. A method according to claim 1 wherein a visual representation of a hyperlinked resource is the whole or part of the hyperlinked resource itself, rendered in its usual manner.
- 15 3. A method according to claim 1 wherein a visual representation of a hyperlinked resource is a scaled version of the whole or part of the hyperlinked resource itself.
4. A method according to claim 2 or claim 3 wherein the hyperlinked
20 resource is fully functional, with all of its own hyperlinks (if any) being fully operational and clickable.
5. A method according to claim 2 or claim 3 wherein:
 - (a) the visual representations appear in frames;
 - 25 (b) the frames include scroll bars where the size of the resource being displayed exceeds the size of the frame, allowing the view shown by that frame of the associated hyperlinked resource to be scrolled; and
 - (c) each frame can be resized, so as to permit a more complete or less complete view of the associated hyperlinked resource.
- 30 6. A method according to claim 1 wherein the visual representations appear in one or more frames and each frame also displays one or more of the following:
 - (a) a title bar for the frame;

- (b) one or more icons on the title bar;
 - (c) an advertisement, which may be a targeted advertisement selected to correspond with the nature of the contents of the associated hyperlinked resource;
 - 5 (d) text, which may include in text form the URL of the associated hyperlinked resource, and which may include a description of the contents of the hyperlinked resource.
7. A method according to any one of claims 2 to 6 wherein the method
10 further includes the step of suppressing any pop-up windows associated with the hyperlinked resource.
8. A method according to any one of claims 2 to 7 wherein the method
15 further includes the step of suppressing any anti-frame coding associated with the hyperlinked resource which would otherwise cause the hyperlinked resource to break out of a frame.
9. A method according to claim 1 wherein visual representations of
20 hyperlinked resources are graphical representations of the appearance of those resources.
10. A method according to claim 9 wherein the visual representations are scaled images of the resources.
- 25 11. A method according to claim 9 or claim 10 wherein a visual representation is generated on a computer associated with the hyperlinked resource.
12. A method according to claim 9 or 10 wherein the visual representations
30 are generated by the Internet Service Provider of the person who is viewing the HTML document.
13. A method according to claim 9 or 10 wherein the visual representations are generated by an image server which receives requests for images of

resources, accesses those resources, generates images, supplies those images in response to requests, and caches frequently accessed images.

14. A method according to claim 1 wherein the visual representations appear
5 in one or more frames and each frame is first filled with a graphical representation of the appearance of the hyperlinked resource, whereafter the graphical representation is subsequently replaced by the hyperlinked resource itself or a geometrically scaled version of the hyperlinked resource itself.
- 10 15. A method of displaying the output of an Internet search engine or directory, including the steps of:
- (a) displaying one or more frames on the search engine or directory output page, each search or directory result being associated with an Internet resource;
 - 15 (b) in each of the one or more frames, displaying a representation of one of the resources associated with a search or directory result;
wherein the representation is visual, audio or a combination thereof.
16. A method of operating an Internet resource locating service including the
20 steps of:
- (a) maintaining a database of Internet page addresses;
 - (b) storing previews of Internet pages;
 - (c) receiving requests for Internet resource location information;
 - (d) responding to the requests with resource location information which
25 includes one or more of the previews;
wherein the previews are visual, audio or a combination thereof.
17. A method according to claim 16 further including the steps of generating and storing a preview image for a page whenever the Internet resource locating
30 service accesses a new or updated Internet page.
18. A method of generating a document which contains representations of other resources from an HTML document which contains hyperlinks to the other resources, including the steps of:

- (a) using a software application to insert frames into the HTML document, each frame being associated with one of the hyperlinks;
- (b) loading into each frame a representation of the resource to which the associated hyperlink points, wherein the representation is:

- 5 (i) the resource itself; or
- (ii) a scaled version of the resource itself; or
- (iii) a graphical representation of the appearance of the resource; or
- (iv) an audio representation of the resource or part thereof; or
- (v) a video representation of the resource or part thereof.

10

19. A method of providing in an HTML document a display of the contents of one or more Internet resources, including the steps of:

- (a) displaying a frame on the HTML document;
- (b) in the frame, displaying a representation of one of the Internet resources;
- 15 (c) after a short period of time, replacing the contents of the frame with a representation of one of the other Internet resources.

20. A method according to claim 19 wherein the frame displays visual representations of a plurality of the hyperlinked resources, one after the other.

20

21. A method according to claim 19 or claim 20 wherein more than one frame is displayed on the HTML document, and more than one of those frames displays cycling visual representations of hyperlinked resources.

25 22. A method of displaying a preview of a resource which is hyperlinked to an HTML document, including the steps of:

- (a) displaying the HTML document; and
- (b) upon a user rolling a mouse cursor over a hyperlink on the document, automatically displaying a visual representation of the hyperlinked resource;

30 wherein the representation of the hyperlinked resource is visual, audio or a combination thereof.

23. A method according to claim 22 further including the step of downloading visual representations for a plurality of resources which are hyperlinked to the

document and caching those representations ready for display when the user rolls the mouse cursor over a relevant hyperlink.

5

10

...

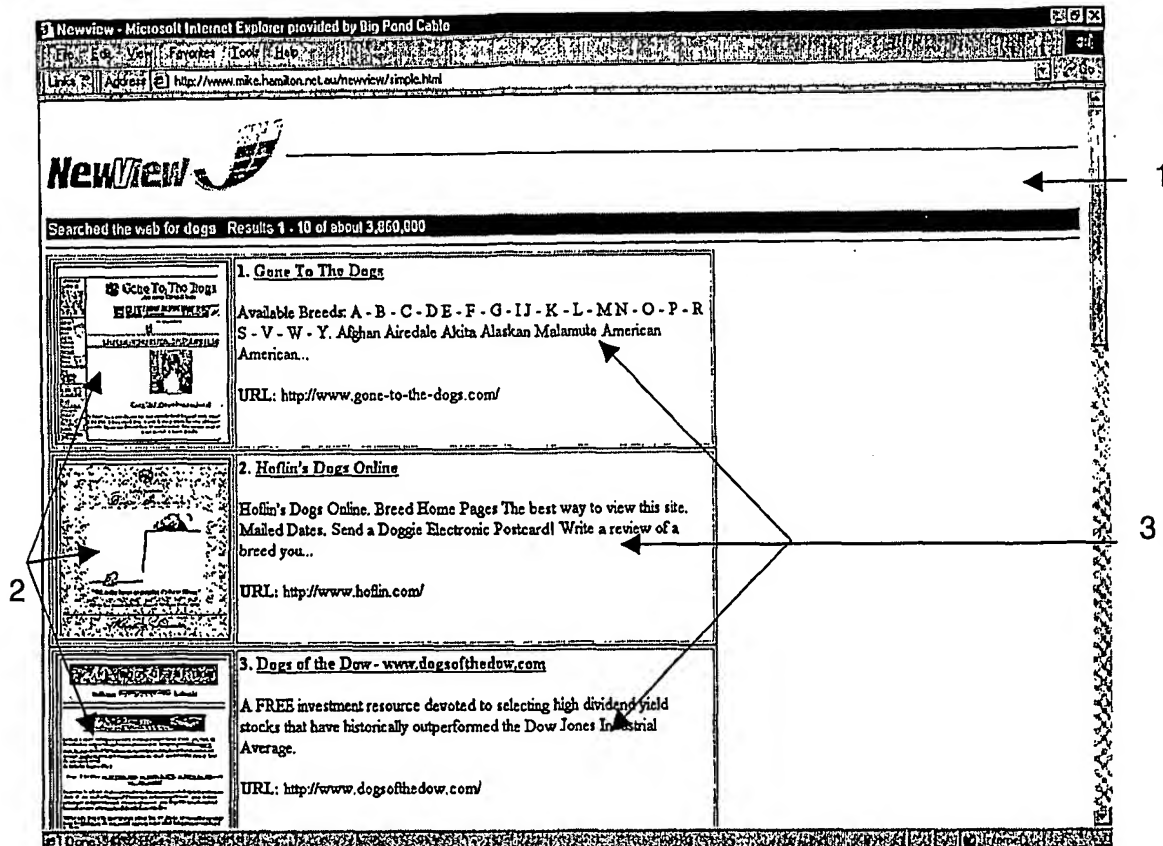


Figure 1

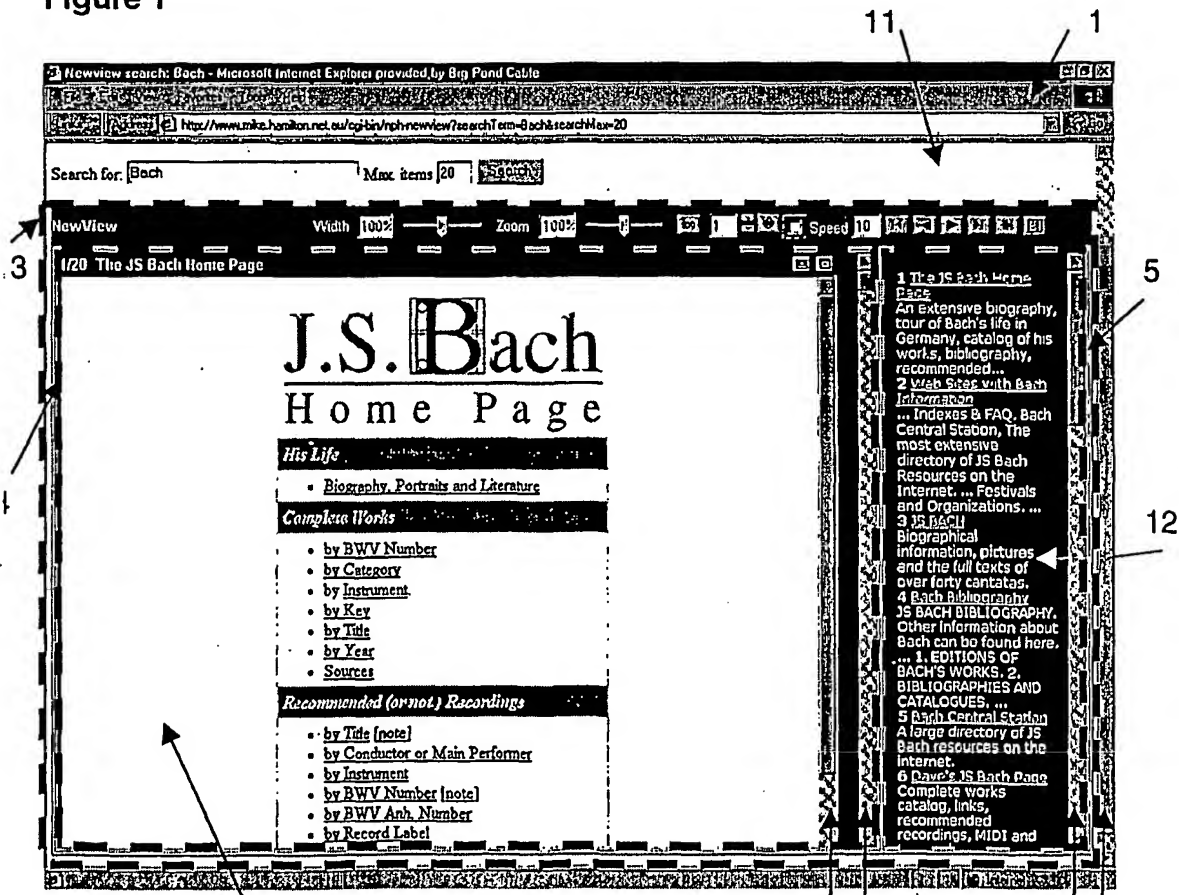


Figure 2



Figure 3



Figure 4

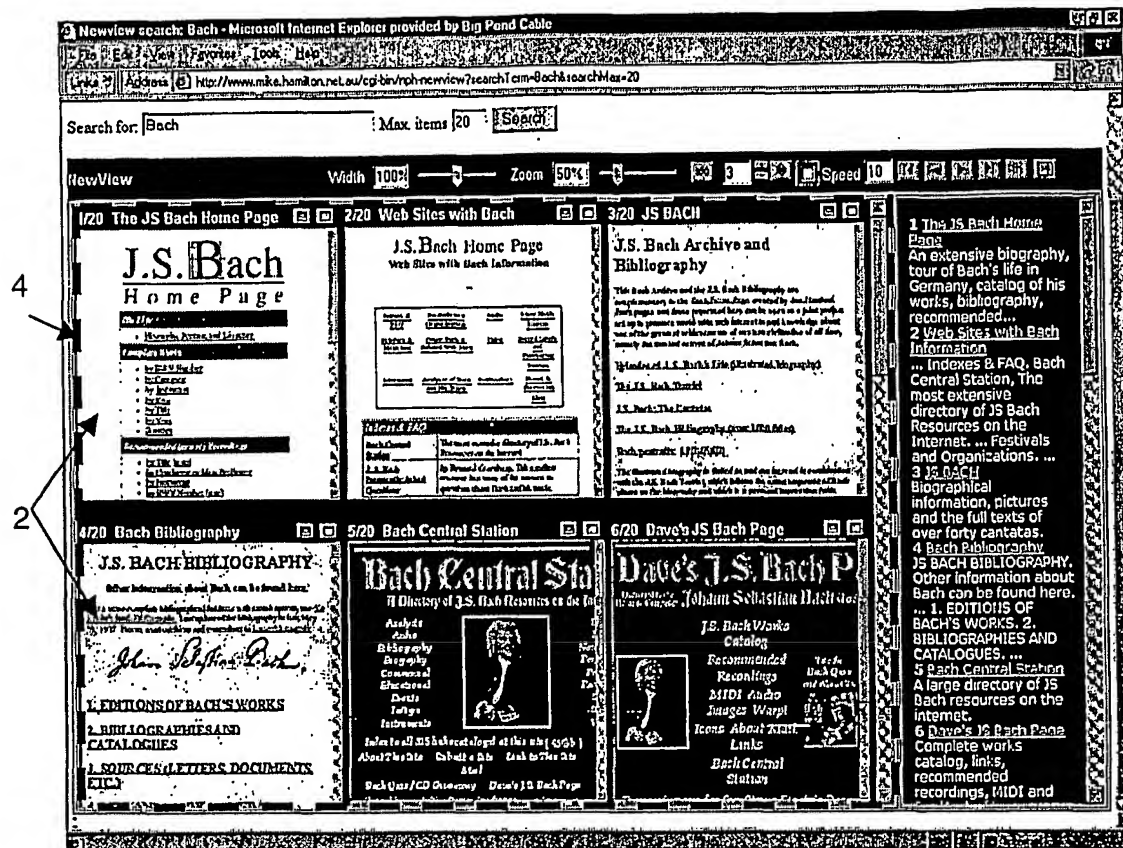


Figure 5

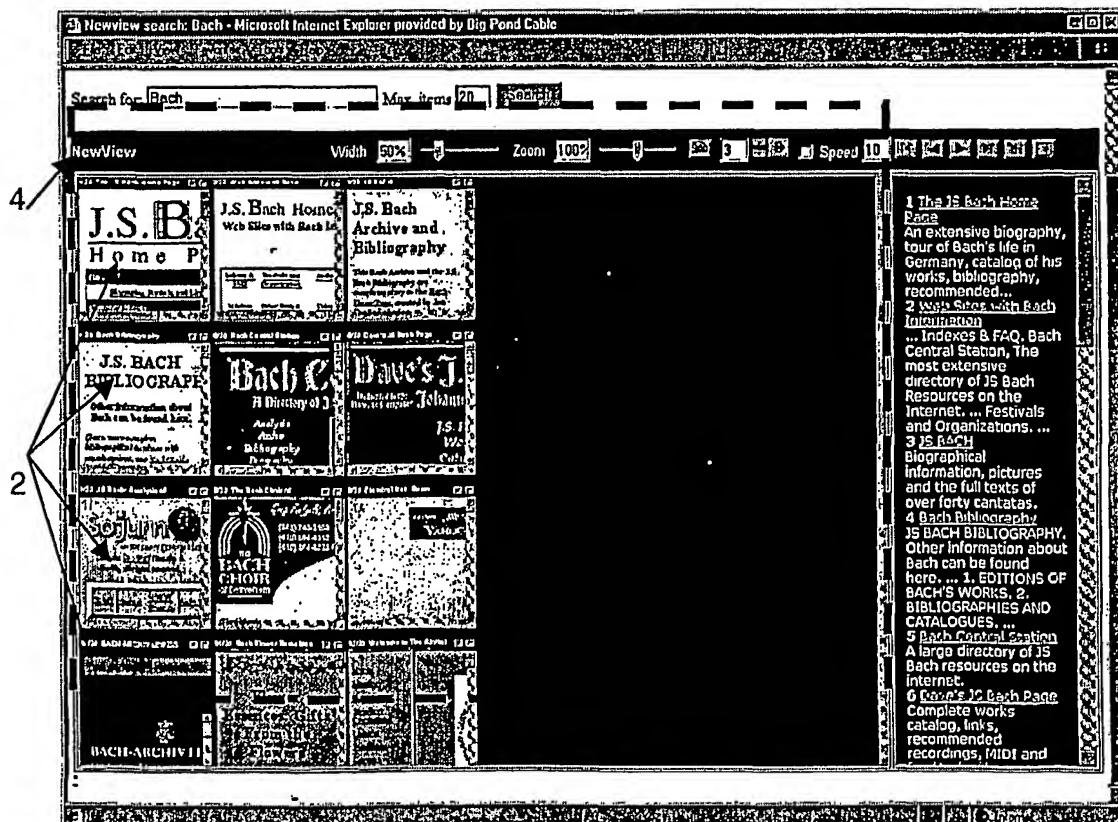


Figure 6

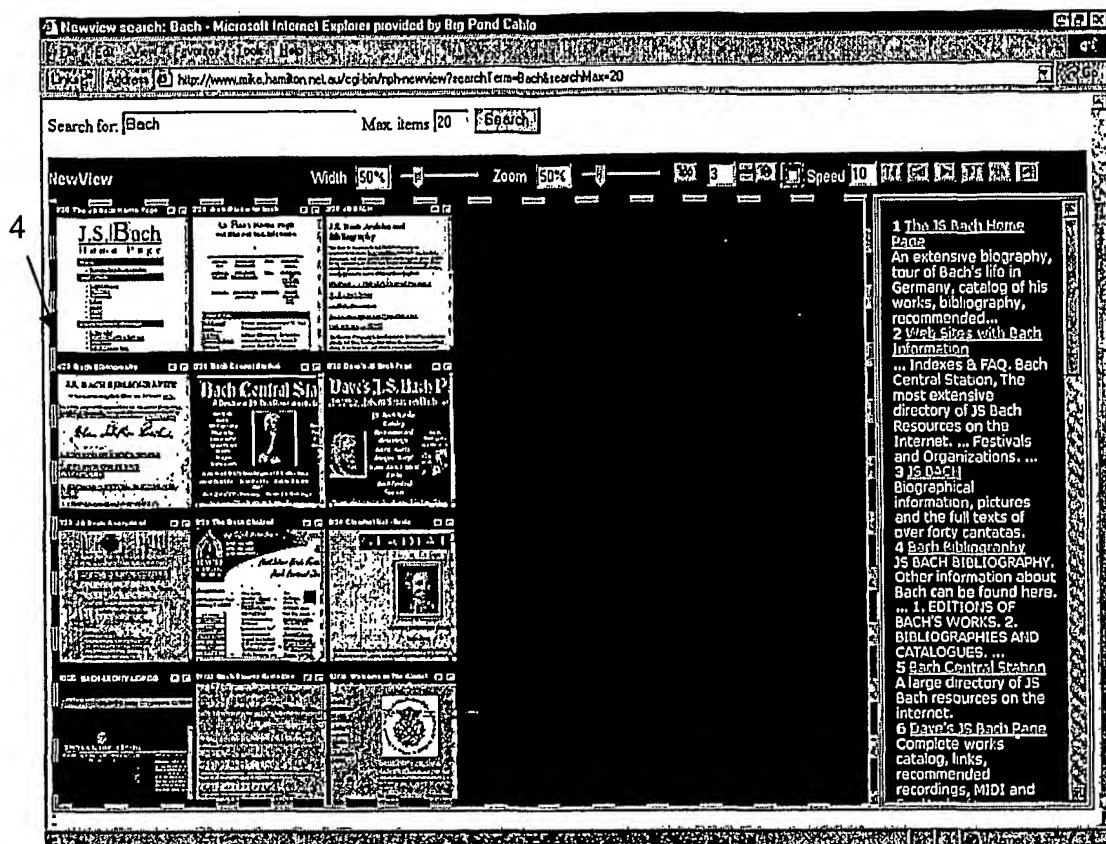


Figure 7

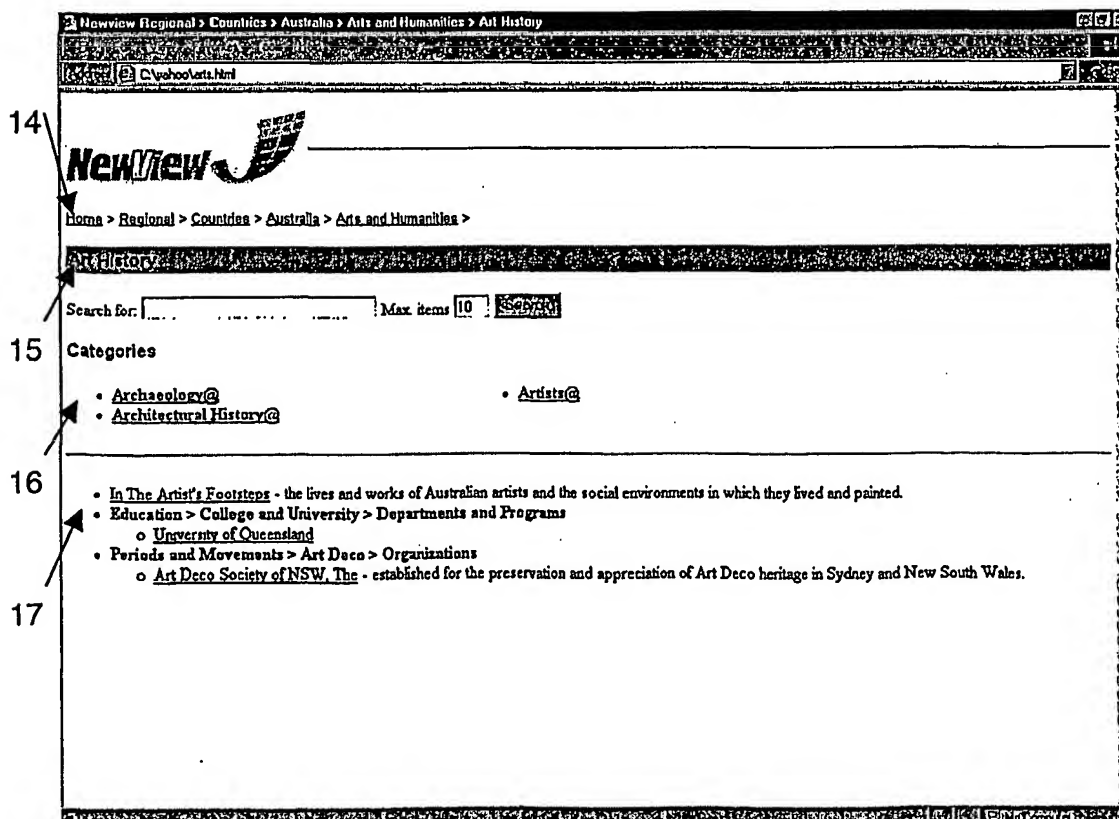


Figure 8

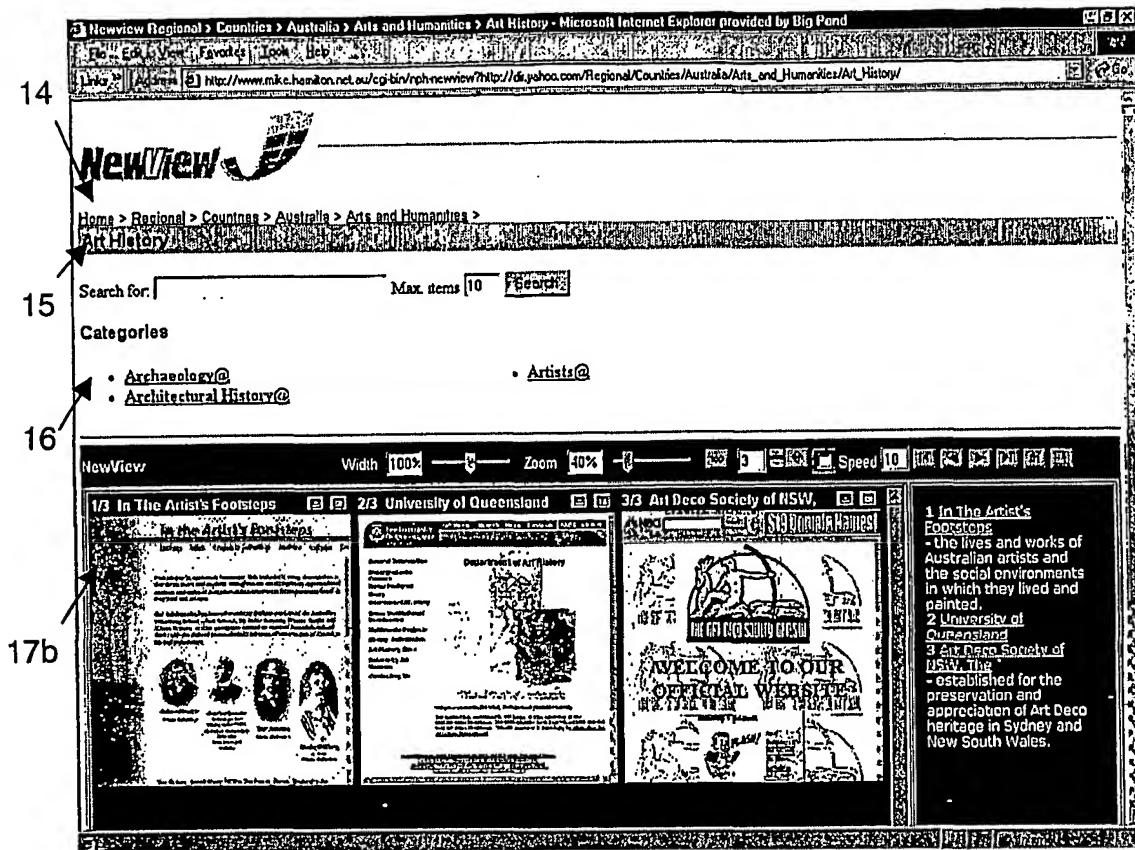


Figure 9

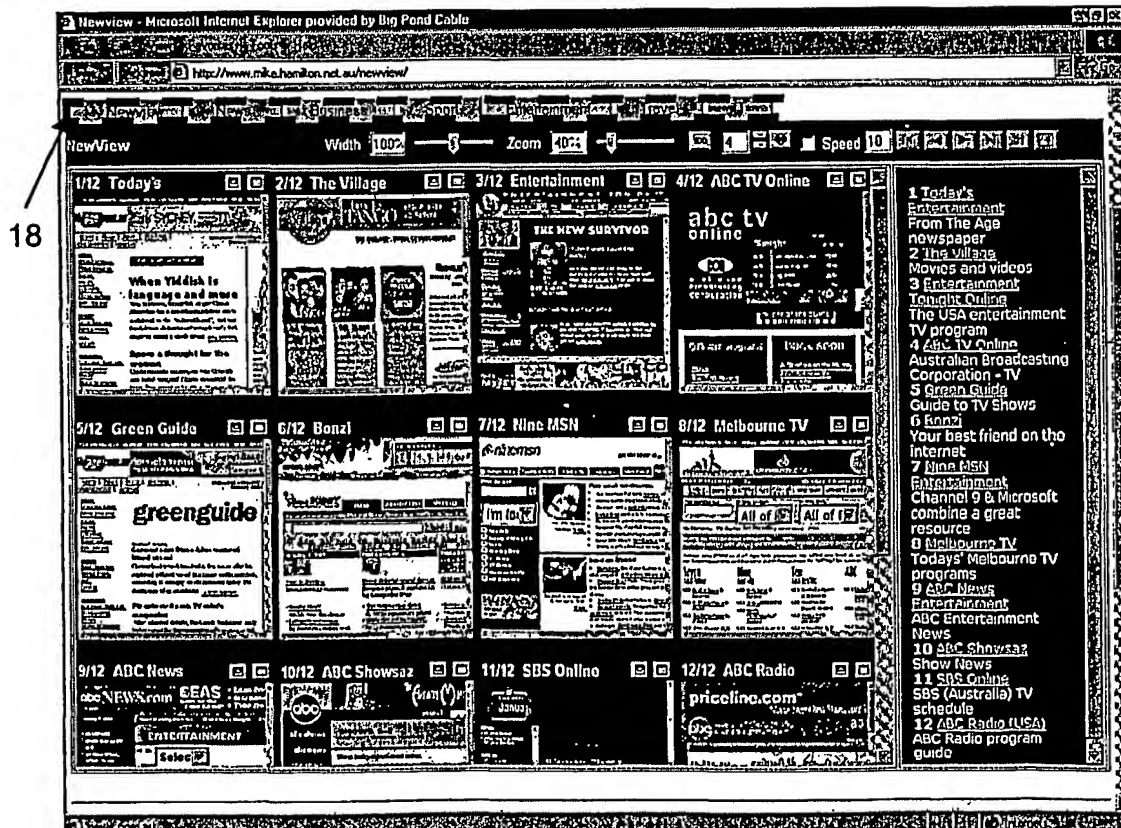


Figure 10

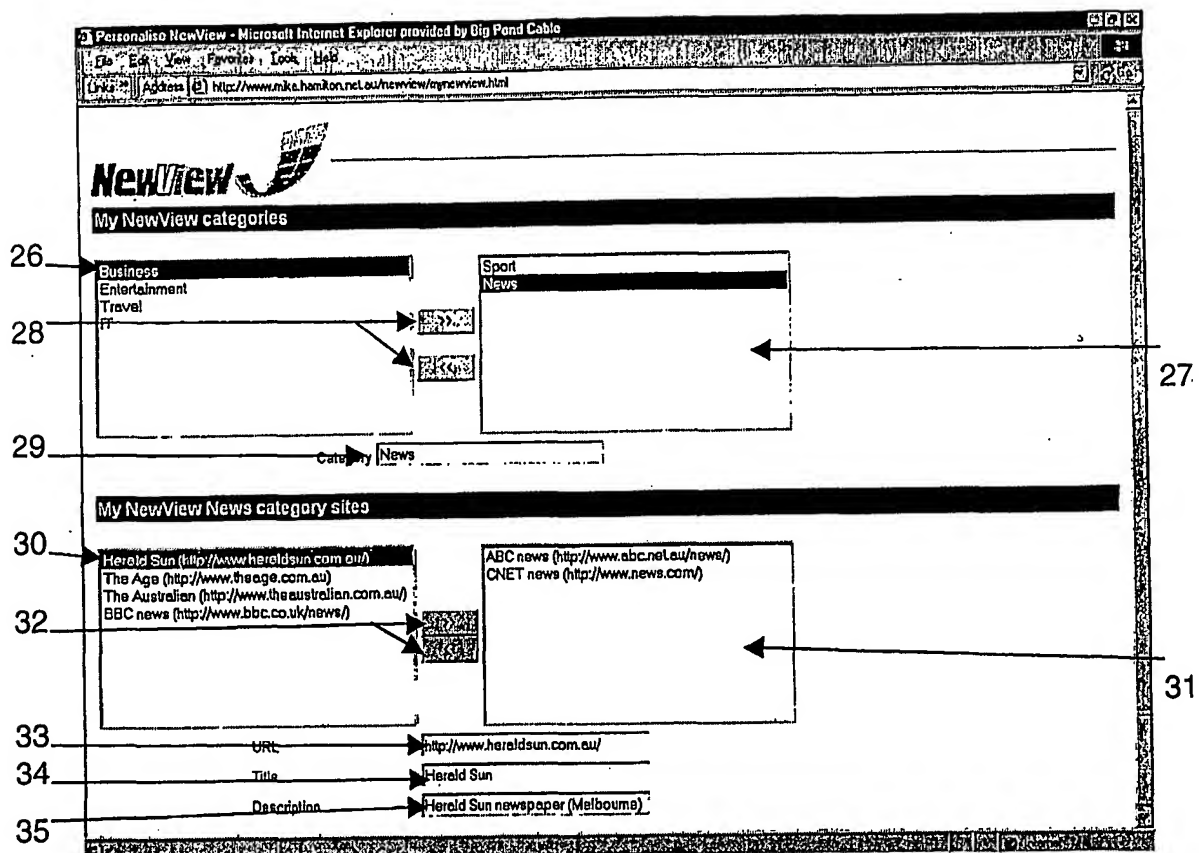


Figure 11

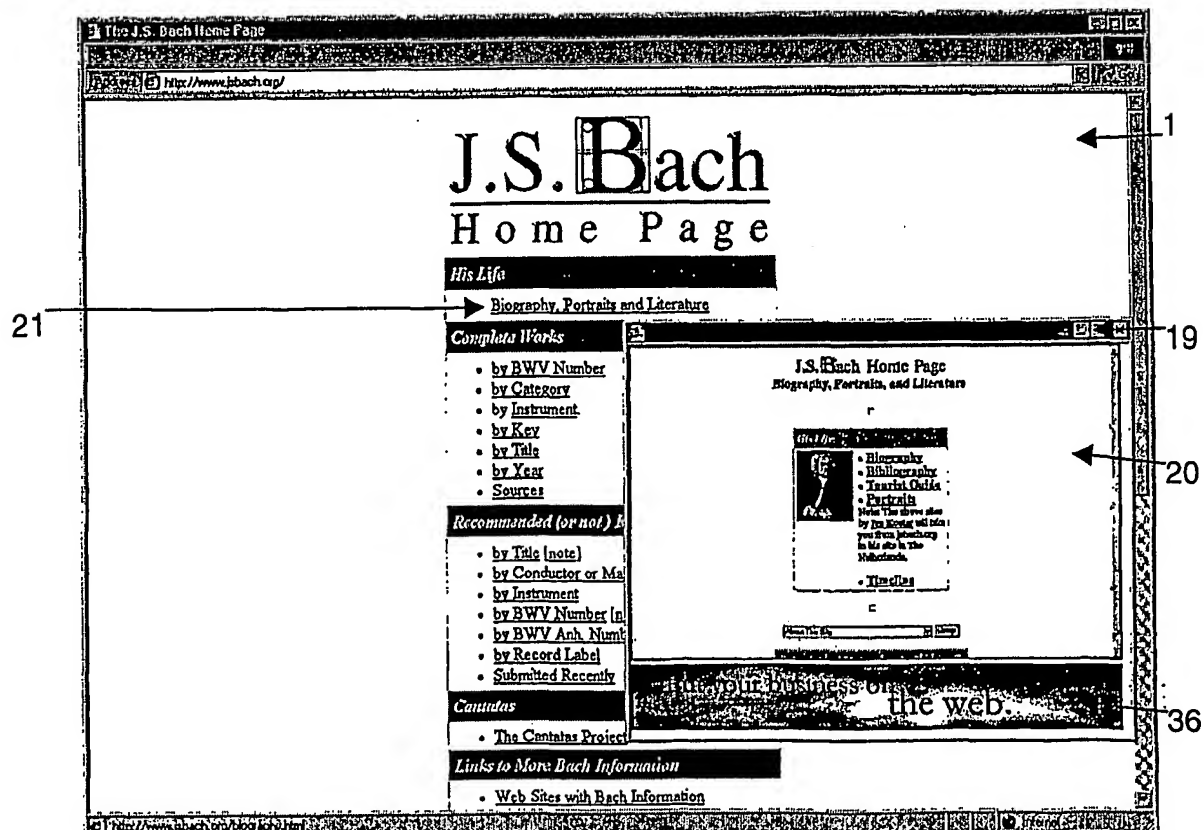


Figure 12

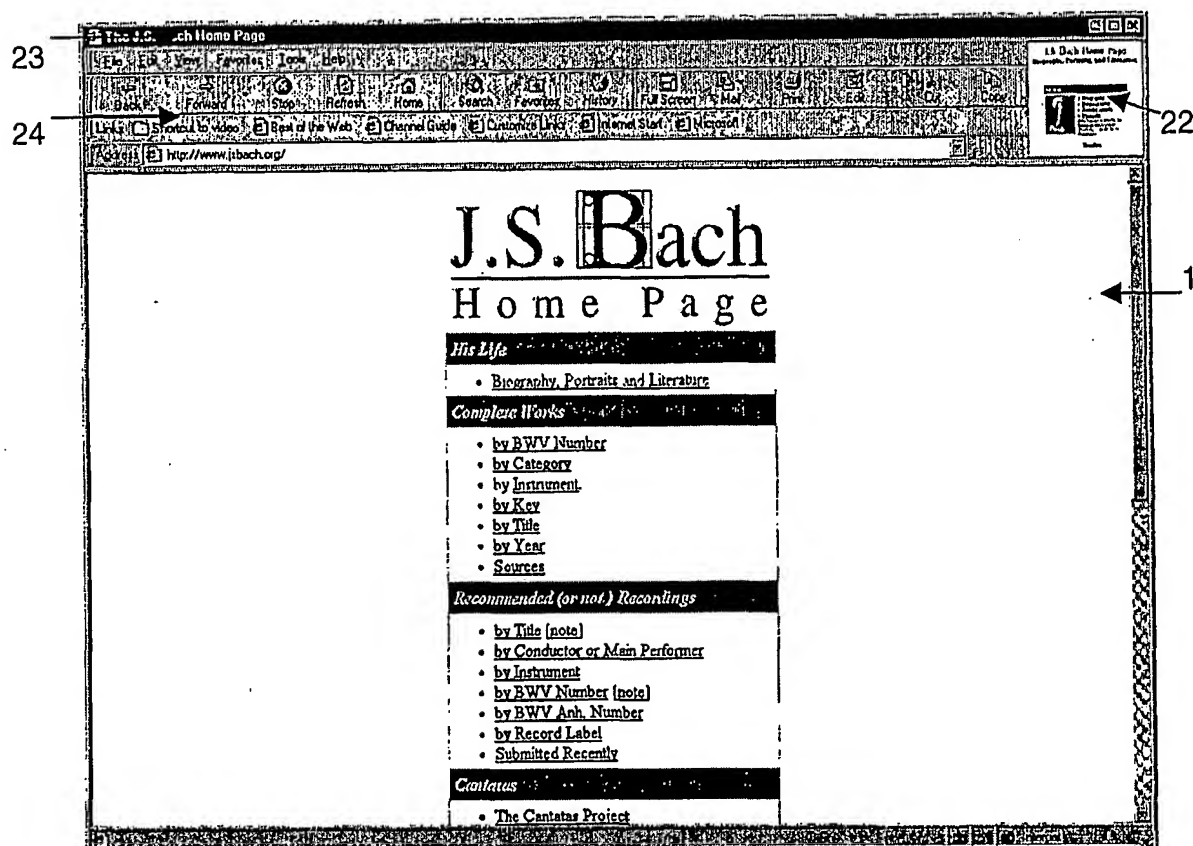


Figure 13

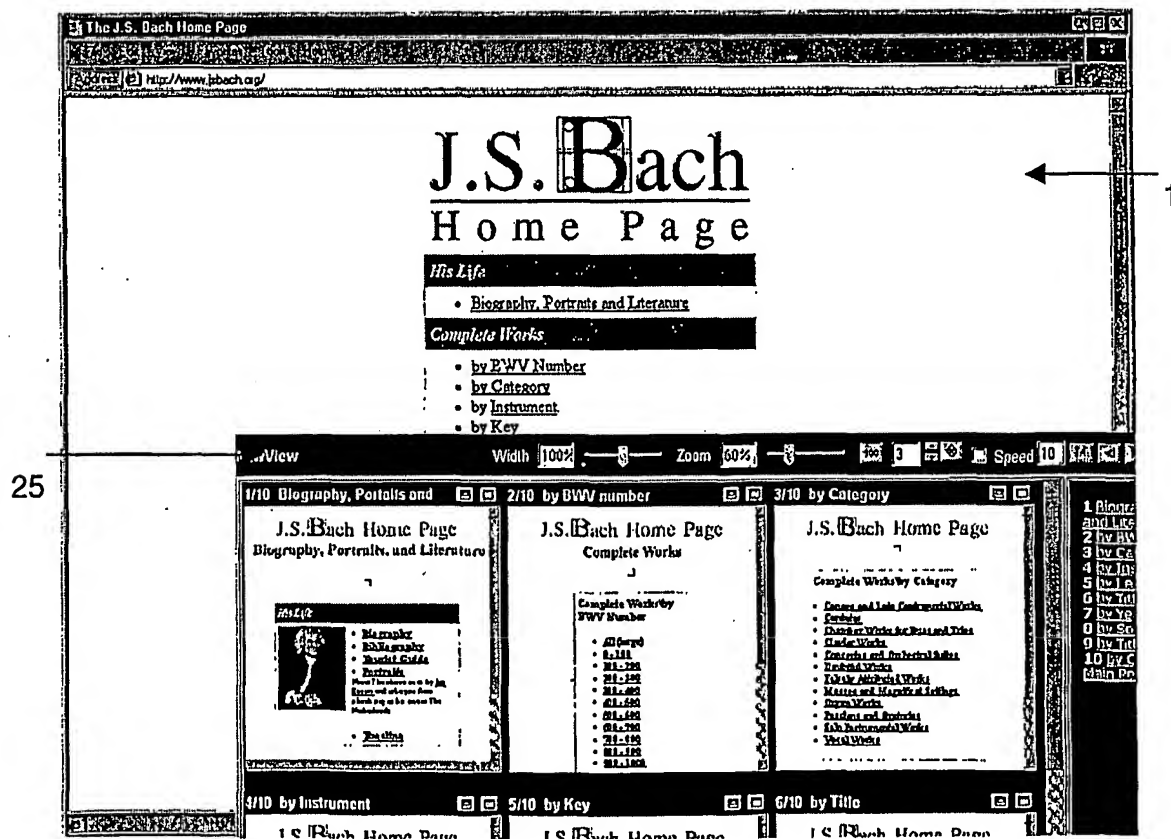


Figure 14

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU02/00086

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: G06F 17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT, Internet (preview, site, visual)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 01/63919 (Penta Trading Ltd.) 30 August 2001 Abstract, claims	1-23
P,X	WO 01/15014 (Gateway, Inc.) 1 March 2001 Abstract, claims, figures	1-23
X	CA 2279145 (Corel Corp.) 1 February 2000 Whole document	1-3,9-11,16,17,19, 22,23
Y		1-23



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

26 March 2002

Date of mailing of the international search report

04 APR 2002

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustalia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

DALE E. SIVER

Telephone No : (02) 6283 2196

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU02/00086

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6058417 (Hess et al.) 2 May 2000 Abstract, figures	6,13
Y	US 6029182 (Nehab et al.) 22 February 2000 Abstract	1,18
Y	US 5 903 892 (Hoffert et al.) 11 May 1999 Abstract, figures, claims	15,16
Y	✓ "Multimedia Search and Retrieval" (Chang et al.) 1999 Published in Advances in Multimedia: Systems, Standards, and Networks	9,15,18

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU02/00086

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO	200163919	AU	200135940		
WO	200115014	AU	200063113		
US	6058417	AU	54856/99	EP	1131724 WO 200025218
US	6029182	EP	834822	JP	10254912
US	5903892	US	5983176	US	6282549
END OF ANNEX					